99 100. The composition of claim 97, wherein said anti-diabetic agent comprises a type of anti-diabetic agent selected from the group consisting of thiazolidinediones, sulfonylureas, benzoic acid derivatives, and alpha-glucosidase inhibitors.

100 101. The composition of claim 99, wherein said anti-diabetic agent is metformin.

101 102. The composition of claim 100, wherein the amount of metformin is in the range of about 100 mg up to about 2550 mg per dose.

102 103. The composition of claim 99, wherein said anti-diabetic agent is a sulfonylurea.

103 104. The composition according to claim 102, wherein said sulfonylurea is acetohexamide, chlorpropamide, tolazimide, tolbutamide, glycazide, glipizide, glyburide, or glimeperide.

104 105. The composition according to claim 99, wherein said anti-diabetic agent is a thiazolidinedione.

105 106. The composition according to claim 104, wherein said thiazolidinedione is troglitazone, rosiglitazone, or pioglitazone.

106 107. The composition according to claim 99, wherein said anti-diabetic agent is an alpha-glucosidase inhibitor.

107 108. The composition according to claim 106, wherein said alpha-glucosidase inhibitor is acarbose or miglitol.

108 109. The composition according to claim 99, wherein said anti-diabetic agent is a benzoic acid derivative.

109 110. The composition according to claim 108, wherein said benzoic acid derivative is repaglinide.

110 111. The composition of claim 97, wherein said bioavailable source of chromium comprises more than 300 micrograms elemental chromium.

111 112. The composition of claim 97, wherein said bioavailable source of vanadium is vanadyl sulfate.

112 113. The composition of claim 97, wherein said bioavailable source of vanadium comprises more than about 10 mg elemental vanadium.

113 114. The composition of claim 97, further comprising an effective amount of a bioavailable source of one or more of the following: magnesium, and aspirin.

114 115. The composition of claim 111, wherein said bioavailable source of chromium is chromium polynicotinate.

115 116. A method for improving glucose metabolism, comprising treating a patient for at least about a thirty day period by administering a pharmaceutical composition comprising an anti-diabetic

agent other than insulin, a bioavailable source of chromium, and a bioavailable source of vanadium, wherein the Hb1Ac level for said patient is reduced by at least about 10% after such treatment as compared to treatment with said anti-diabetic agent alone.

116 115
~~117~~. The method of claim ~~116~~, wherein said anti-diabetic agent comprises a type of anti-diabetic agent selected from the group consisting of thiazolidinediones, sulfonylureas, benzoic acid derivatives, and alpha-glucosidase inhibitors.

117 116
~~118~~. The method of claim ~~117~~, wherein said anti-diabetic agent is metformin.

118 115
~~119~~. The method of claim ~~116~~, wherein said bioavailable source of chromium comprises more than 300 micrograms elemental chromium when said composition is administered on a daily basis.

119 118
~~120~~. The method of claim ~~119~~, wherein said bioavailable source of vanadium comprises at least about 10 mg elemental vanadium when said composition is administered on a daily basis.

120 118
~~121~~. The method of claim ~~119~~, wherein said bioavailable source of vanadium is vanadyl sulfate.

121 120
~~122~~. The method of claim ~~121~~, further comprising an effective amount of a bioavailable source of one or more of the following: magnesium, and aspirin.

122
~~123~~. An ingestible formulation for improving glucose metabolism in a subject with abnormal glucose metabolism, comprising:

(a) a bioavailable source of chromium in a complex and amount that delivers an effective amount of chromium for improving glucose metabolism;

(b) a bioavailable source of vanadium in a complex and amount that delivers an effective amount of vanadium for improving glucose metabolism; and

(c) an anti-diabetic agent other than insulin,

wherein treatment with said composition for at least about thirty days reduces the Hb1Ac level for said subject by at least about 50% as compared to treatment with said anti-diabetic agent alone.

123 122
~~124~~. The ingestible formulation of claim ~~123~~, wherein said amount of said bioavailable source of chromium comprises no less than 200 micrograms of elemental chromium.

124 123
~~125~~. The ingestible formulation of claim ~~124~~, wherein said amount of said bioavailable source of vanadium comprises no less than 5 mg of elemental vanadium.

125 124
~~126~~. The ingestible formulation of claim ~~125~~, further comprising an effective amount of one or more of the following: aspirin, Vitamin E, and a bioavailable source of magnesium.

126 123
~~127~~. The ingestible formulation of claim ~~124~~, wherein said anti-diabetic agent comprises a type of anti-diabetic agent selected from the group consisting of thiazolidinediones, sulfonylureas, benzoic acid derivatives, and alpha-glucosidase inhibitors.

127
~~128~~. A pill for improving glucose metabolism in a subject with abnormal glucose metabolism, comprising:

(a) a bioavailable source of chromium in a complex and amount that delivers an effective amount of chromium for improving glucose metabolism; and

(b) a bioavailable source of vanadium in a complex and amount that delivers an effective amount of vanadium for improving glucose metabolism; and

(c) an anti-diabetic agent other than insulin,

wherein treatment with one or more of said pills on a daily basis for a period of at least about thirty days reduces the Hb1Ac level of said subject by at least about 10% as compared to treatment with said anti-diabetic agent alone.

128
~~129~~. The pill of claim 128, wherein said amount of said bioavailable source of vanadium comprises no less than 5 mg of elemental vanadium.

129
~~130~~. The pill of claim 129, wherein said amount of said bioavailable source of chromium comprises no less than 5 micrograms of elemental chromium.

130
~~131~~. The pill of claim 130, further comprising an effective amount of one or more of the following: a bioavailable source of aspirin, Vitamin E, and a bioavailable source of magnesium.

131
~~132~~. The pill of claim 131, wherein said anti-diabetic agent comprises a type of anti-diabetic agent selected from the group consisting of thiazolidinediones, sulfonylureas, benzoic acid derivatives, and alpha-glucosidase inhibitors.

132
~~133~~. A kit for improving glucose metabolism in a subject comprising:

(a) an ingestible formulation comprising a bioavailable source of chromium in a complex and amount that delivers an effective amount of chromium for improving glucose metabolism, a bioavailable source of vanadium in a complex and amount that delivers an effective amount of vanadium for improving glucose metabolism, and an anti-diabetic agent other than insulin; and

(b) instructions for the administration of said ingestible formulation,

wherein use of one or more of said kits in accordance with said instructions by said subject for a period of at least about thirty days reduces the Hb1Ac level for said subject by at least about 10% as compared to treatment with said anti-diabetic agent alone.

133 132
~~134~~. The kit of claim ~~134~~, wherein said instructions provide for (a) the simultaneous administration of said chromium, vanadium and anti-diabetic agent, and (b) the daily dose regiment for said kit and the duration of use one or more of said kits.